

ERLANGER HEALTH SYSTEM

RURAL HEALTH CARE FIBER NETWORK

Introduction:

Erlanger Health System, located in southeast Tennessee, is a regional non-profit medical facility. Erlanger is requesting \$2,198,610 in funding from the FCC Rural Health Care Pilot Program to be matched by a minimum of \$387,990 from Erlanger and Chattanooga's public utility the Electric Power Board (EPB). These project funds will be used in conjunction with an \$18,000,000 fiber network expansion by EPB to create a multi-county and multi-state rural health care secure fiber network between the regions hospitals for the rapid real time electronic information exchange of digital health data in a range of formats.

The planned network will initially serve five rural non-profit hospitals in Tennessee and North Carolina, along with a rural for profit dedicated emergency department and three urban hospitals in the Erlanger Health System. In addition the network will be linked with the Blue Ridge Electric Membership Cooperative fiber ring which will access additional north Georgia and North Carolina hospitals that are presently linked to each other.

The proposed rural health care network takes advantage of the power of partnerships by partnering with EPB, an existing local electric and telecom provider that will provide network management operations and maintenance. The project also involves additional local rural public electrical cooperatives in order to access right-of-ways and as mentioned, will affiliate with Blue Ridge EMC to extend the network cost effectively to the very fringe of the regional health care catchment area. With EPB investing \$18,000,000 in developing a fiber network throughout their predominantly urban service area, it creates the unique opportunity to use local funds in conjunction with FCC Rural Health Care Pilot Program funding to create a comprehensive urban and rural health care fiber network that insures the delivery of high resolution imagery, voice, video, and data across the entire multi-county, multi-state, regional health service catchment area.

Contacts:

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Erlanger Health System: – Douglas Fisher, -Sr. Director Governmental and Community Affairs 423-778-9642

Electric Power Board: - Jim Ingraham, -Sr. Manager Strategic Initiatives, 423-648-1308

Narrative:

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1. Identify the organization that will be legally and financially responsible for the conduct of activities supported by the fund.

The Erlanger Health System, headquartered in Chattanooga Tennessee will be the designated grantee, legally and financially responsible for the activities supported by the grant.

Erlanger Health System is a public non-profit, academic teaching center affiliated with the University of Tennessee College of Medicine. Erlanger is the major regional health care provider for a multi-state region and provided 1.2 billion dollars in health care services in the past year. Erlanger is also a level-one (the highest ranking) Trauma Center and has five different campuses located across Chattanooga and southeast Tennessee. Erlanger is the only provider of tertiary care services for the public in a four state region encompassing southeast Tennessee, north Georgia, northeast Alabama and western North Carolina. The Erlanger campuses include Baroness Erlanger Hospital (downtown Chattanooga) T. C. Thompson Children's Hospital with a level three neonatal intensive care unit (the highest ranking), Erlanger East/Women's Erlanger, Erlanger North (Red Bank) and Erlanger Bledsoe (Pikeville). As the applicant organization, Erlanger Health System is working in partnership with a number of other public partners, most notably the Electric Power Board (EPB) of Chattanooga which will play a key role in operation and maintenance of the proposed fiber network.

Erlanger's current telemedicine facilities include a robust Wire-Area-Network to many of its locations and a secure VPN. Erlanger has a complete technical staff that includes: microcomputer and network design and support technicians and analysts; software and application analysts and bio-medical technicians all of whom are experienced in their own areas of telemedicine. Current capabilities in telemedicine include remote telemetry at Erlanger North and Erlanger Bledsoe in Pikeville; PACS at Erlanger North, East and Bledsoe; video telemedicine at Erlanger Bledsoe and the Hamilton County Clinic; and remote Grand Rounds through the UT College of Medicine.

2. Identify the goals and objectives of the proposed network.

The proposed service area of the network is the multi-state predominantly rural health care "catchment area" of Southeast Tennessee, north Georgia, western North Carolina and northeastern Alabama. The general way health care services work in this region is that some limited health care is provided in rural areas primarily through private physicians and small rural hospitals. Specialist or acute care is referred to Chattanooga which has a major cluster of specialist physicians and major public health facilities of which Erlanger Health System is by far the largest. With their highly rated trauma center, Erlanger has an extensive range of specialists available 24 hours a day, seven days a week, so they have become the regional center for specialist and acute care. Therefore for there to be an effective health care system in the region, it must involve both urban and rural components. Over such a large geographic area of difficult mountainous terrain, the

rapid and secure exchange of health information in digital, high resolution image, voice and video is increasingly critical and at the same time offers the opportunity through telemedicine to provide dramatic improvements in rural health care with immediate remote access to medical specialists that presently can only be found in major urban hospitals.

In addition to the normal health care flow, due to the strategic location of north Georgia and southeast Tennessee there are periodic seasonal influxes of sizable refugee populations from hurricane relocations that evacuate up both the I-75 and I-59 corridors from both Florida and the northern Gulf coast region. These people normally show up without medical records and sometimes stay for extended periods of time. The planned network will allow area hospitals to rapidly search for and exchange health data as needed with regard to these special needs groups as well as in other unusual events.

Erlanger Health System recognizes, as others have, that the potential of information technology to improve the delivery of care while reducing costs is enormous. However, throwing money at an idea without clear achievable goals is not an affordable strategy. Therefore the initial goal is very basic and achievable. It is the establishment of a secure network between the regions' hospitals for the rapid, real time electronic information exchange of digital health data in a range of formats.

This network will also be linked with other fiber networks being developed by the Chattanooga based Electric Power Board (EPB) and the Blue Ridge Electric Membership Cooperative (BREMC) which has developed a fiber ring serving very rural remote western North Carolina and northeast Georgia. Through the Blue Ridge EMC network, it is also possible to link with Balsam West FiberNet which provides an additional fiber ring to more distant portions of western North Carolina and north Georgia. This would encompass even more remote rural hospitals in the fringe of the current regional healthcare catchment area. This planned network with its linkages will provide the multi state regional platform for future secure electronic access to patient-centered electronic health records (EHR) as these become established in our regions health care facilities.

The network will allow broadcast consultation between providers at two or more locations; video consultations and patient examinations; monitoring/recording of a patients behavior or surgery procedure; continuing medical education (CME); healthcare outreach through video consultations with patients and physicians at rural hospitals, clinics, and correctional facilities; a virtual nursery and video visitations; transmission of patient records and x-rays (HIS, PACS, and EMR); as well as lending emotional support for coping with chronic and acute illness; in addition to other telemedicine services.

With the enlarged access that will be provided with EPB's current 18 million dollar fiber network expansion, which will facilitate their Fiber To The Home (FTTH) program, the proposed network and linkages will allow medical services to be delivered remotely to the home, thus once again, improving the delivery of care while reducing cost.

3. Estimate the networks total costs for each year.

Erlanger will enjoy a distinct advantage in the operation of the health care network due to simple economies of scale. By partnering with EPB Erlanger will be able to focus on content or training and applications of the network rather than on the physical responsibilities of management, operation and maintenance of the network. In this partnership EPB will be responsible for the physical management, operation and maintenance of the health care network.

EPB, a local public utility, is a major local presence in the telecom business, with both voice and internet, and presently has 185 miles of fiber in the urban core of Chattanooga and another 690 miles budgeted to begin construction this coming July. EPB's telecom division continues to experience steady growth and presently has 46 employees in their telecom division. EPB has budgeted approximately \$6 million for *operating* expenses of their telecom division for FY 2007. The majority of these expenses are related to the larger phone service functions, but approximately \$350,000 of this expense is allocated to EPB Internet. Approximately 60 percent of these operating expenses are related to labor and labor related costs. Total telecom expenses and revenue are projected to continue to grow significantly over the next five years as the current EPB service area fiber expansion is constructed and additional customers are connected.

As a result of EPB already having a significant presence and investment in the telecom business, Erlanger will be able to contract with EPB for a modest incremental cost to operate the proposed rural health care network. This approach will significantly reduce initial staffing expense for what would otherwise be a start-up rural health care network. This partnership will also bring additional, but at this time undetermined, future economic opportunities to EPB which, over time, will help hold down the health care network costs. At this point, we do not know what these health care network costs will be, but due to the scale of EPB's current telecom operation, we know the planned partnership is affordable and considerably less expensive than a stand alone network operation by Erlanger Health System.

4. Describe how for-profit network participants will pay their fair share of the network costs.

The initial focus, or first phase, will be to develop a network to connect not-for-profit hospitals as well as a dedicated emergency department of a rural for-profit hospital, all in the multi-state service area. The non-profits are the providers which serve the largest number of clients and the highest percentage of uninsured and indigent clients. Thus these facilities with a smaller margin of profitability can be positively impacted the most from the capability of this technology to reduce costs as well as assist with a coordinated rapid response in the event of a national or regional crisis. The shared initial focus on dedicated emergency departments of rural for-profit hospitals is important because these rural dedicated emergency departments must rely on a "patch and ship" approach to emergency care and are active regional feeders to the Erlanger Health System air

ambulance component for acute care cases. The ability of these rural emergency departments to rapidly exchange health records and data in the network will improve acute care while also improving accurate emergency responses.

For the network to achieve its tremendous potential, it is very important to encourage the participation of both urban and rural for-profit health care providers. The intent of the network in a second later phase, to develop a cost share plan based on other effective models for the active involvement of for-profit network participants as the network grows and the opportunity to serve these providers comes available. The Electric Power Board of Chattanooga (EPB) is a public non-profit that will contract with Erlanger to operate and maintain the network. EPB currently operates a fiber network that serves primarily corporate, business and industrial clients. EPB is beginning an \$18,000,000 expansion of their fiber network that will ultimately expand their existing network service to many more clients throughout Hamilton County and portions of north Georgia. The EPB pricing structure will be used along with other models and any program requirements of the Rural Health Care program to establish a basis for for-profit health care providers to participate and pay a fair share of network costs.

5. Identify the source of financial support and anticipated revenues that will pay for costs not covered by the fund.

There are both capital costs and operating costs associated with the system. The network will be developed in phases. The initial capital development phase will be funded by the FCC Rural Health Care Pilot Program and portions of the Electric Power Boards \$18,000,000 investment in expanding the fiber network throughout the urban and rural portions of their service area. As operating revenues grow, these will be used to fund the debt service necessary for construction of the additional phases which will target for profit hospitals. It is anticipated that additional grant funding can be secured through USDA's Rural Development programs and the Appalachian Regional Commission (ARC) which will speed the development of the network and pay for some costs not covered by the fund. The Copper Basin Medical Center which serves the isolated eastern area of Polk County is presently applying for Appalachian Regional Commission funding to assist with the cost of telemedicine imaging equipment which would be used to transmit data over the planned network. The Rhea County Hospital has already received ARC funding that helped purchase \$300,000 in new diagnostic imaging equipment which produce digital scans that will be transmitted over the proposed network. Rhea County Hospital is presently seeking Rural Development grant funds to assist with other telemedicine equipment costs. Therefore steps have already been taken to provide substantial additional local capital while also seeking additional public funding from diverse sources to help leverage capital facility development of the new network.

EPB will operate the network for Erlanger Health System. EPB presently has staff in place to operate their existing broadband fiber network, so the operating costs of this healthcare network will be able to take advantage of the economies of scale of the EPB operation. As a result, the incremental increase in operational costs will be minor. The

Electric Power Board also has a successful history of partnering with the other electric utilities throughout the multi-state Erlanger “catchment area” where the network is planned to be deployed. The proposed service area of the network shares the same regional economy and there are many business, cultural and service links that tie this multi-state region together and foster a sense of a regional community. For example these public utilities share a common jointly funded economic development staff through the Southeast Industrial Development Association and this experience in working together with a successful track record allows the opportunity to establish broadband partnerships for development, right-of-ways, financing, operation and maintenance of the health care network as it expands throughout the planned service area. This evolving role of the surrounding electric utilities will become very important to the proposed health care network as it expands into surrounding counties and portions of adjacent states which are in the health service area.

These planned electric power partners include the following utilities:

Blue Ridge Electric Membership Cooperative - (Joe Satterfield, General Manager, 706-379-3121)-BREMC located in Hiawassee Georgia serving northeast Georgia and portions of western North Carolina. BREMC currently is completing installation of a broad band fiber network ring across their service area and is presently providing broadband fiber linkages to a growing number of customers including two remote rural north Georgia hospitals which are transmitting high quality images and data. Blue Ridge EMC is also providing connectivity with their fiber ring to Murphy Medical Center (North Carolina) and Fannin Regional Hospital (Georgia) as well as the two additional hospitals previously mentioned.

Chickamauga Electric System – (John Culpepper, General Manager, 706-375-3177) – Located in Chickamauga Georgia. Chickamauga can provide needed right-of-ways in future expansions of the network.

Cleveland Utilities – (Tom Wheeler, General Manager, 423-478-9331) Located in Cleveland Tennessee and serving most of Bradley County Tennessee with integrated utilities and currently developing a municipal area broadband network. Cleveland Utilities presently has no commercial customers on their network, but can provide some maintenance support within their service area and important right-of ways. In the next few years, with regulatory changes, Cleveland’s network will hopefully become accessible to commercial customers and may be able to play an important role in linking local medical service providers to the regional network.

Dayton Electric – (Frank Welch, General Manager, 423-775-1817) – Located in Dayton Tennessee and serving portions of Rhea and Bledsoe County with electricity and other integrated utilities. Dayton’s service area includes Rhea County Hospital. Dayton Utilities can provide right-of-ways and access.

Electric Power Board – (Harold Depriest, General Manager, 423-757-1484) EPB is located in Chattanooga Tennessee providing electric, phone and broadband service to

Hamilton County Tennessee along with smaller portions of Rhea, Marion and Sequatchie Counties Tennessee as well as portions of Walker County Georgia. EPB will operate and maintain the proposed network under contract with Erlanger.

Etowah Utilities – (Brian Sosbee, General Manager, 423-263-9441) – Located in Etowah Tennessee, serving portions of several counties with integrated utilities including water sewer, electricity and natural gas. Etowah Utilities serves Woods Memorial Hospital. Etowah Utilities will provide needed right-of-ways.

Murphy Power Board – (John Carringer, General Manager, 828-837-2211) – located in Murphy North Carolina, the Murphy Power Board serves the town of Murphy and portions of Cherokee County North Carolina. The service area includes the Murphy Medical Center which has management and operational linkages with the Copper Basin Medical Center. Murphy Power Board has already assisted with right-of ways for Blue Ridge EMC to install their fiber ring through this service area and access key health care facilities which will be linked to the proposed rural health care network.

North Georgia Electric Membership Cooperative – (Ron Hutchins, General Manager, 706-259-9441, ext 1201) Located in Dalton Georgia and serving a large multi-county rural area of north Georgia with electric service. North Georgia EMC will provide needed right-of-ways, and may be helpful in other ways as the network expands into this portion of North Georgia in a future phase.

Sequachee Valley Electric Cooperative – (Robert Matheny, General Manager, 423-837-8605) – Located in South Pittsburg, Tennessee, SVEC provides electric service for Bledsoe, Grundy, Marion, Sequatchie and Van Buren Counties in Tennessee. SVEC serves Grandview Hospital in Jasper, North Valley Medical Center in Dunlap and Erlanger Bledsoe in Pikeville. SVEC will provide needed access and right-of-ways.

Tri-State Electric Membership Cooperative – (David Falls, General Manager, 706-492-3251) – Located in McCaysville Georgia and serving the Copper Basin area of Polk County, Tennessee, Fannin County Georgia and Cherokee County North Carolina. Tri-State's service area includes the Copper Basin Medical Center and the Fannin Regional Hospital. Tri-State has already demonstrated their commitment by working with Blue Ridge EMC to help leverage the development of their fiber ring which will be linked with this planned network.

6. List the health care facilities that will be included in the network.

The need for a broadband network among all the health care facilities to share data in a range of formats is widely recognized and this need is growing as health care services increase. However the facilities that provide a range of health care services are widely scattered and the financial resources for linking them are limited. Therefore it will be necessary to phase the development of the health care network.

The network is being planned to include all the major primary health care facilities across the multi state area of southeast Tennessee, north Georgia and western North Carolina, as rapidly as financially feasible to add them. The initial phase of the system will target the smaller rural non-profit hospitals (Copper Basin Medical Center, Erlanger Bledsoe, Murphy Medical Center, Rhea Medical Center, Woods Memorial Hospital) and one dedicated emergency department of a rural for profit (North Valley Medical Center). Urban hospitals in the initial network consisting of Erlanger Baroness, Erlanger North and Erlanger Women's/Erlanger East will be connected to the network through EPB's planned expenditures.

The basic goal of the planned network is to link the primary health care facilities with a secure and rapid network for the real time exchange of digital electronic health data in a range of formats. However, for the network to be truly effective it will be important as time and resources permit, to link as many health providers to the network as possible. In addition to hospitals this will include public health departments, health clinics, doctor's offices, and centers of incarcerated populations such as jails and prisons in the area. That is why the EPB-funded construction of a fiber broadband network through urban areas of Chattanooga that will link many of these urban health facilities to the planned network is in turn, so important to the success of the planned health network.

Primary health care facilities that will be included in the network include:

First Phase

Copper Basin Medical Center –Polk County TN
Erlanger Bledsoe –Bledsoe County TN
Erlanger Baroness (Downtown Chattanooga) –Hamilton County TN
Erlanger North –Hamilton County TN
Murphy Medical Center –Cherokee County NC (via Blue Ridge EMC network)
North Valley Medical Center –Sequatchie County TN
Rhea Medical Center-Rhea County TN
Erlanger Woman's/Erlanger East –Hamilton County TN
Woods Memorial Hospital –McMinn County TN

Later Phase

Grandview Medical Center –Marion County TN
Hutcheson Medical Center-Walker County GA
Skyridge Medical Center –Bradley County TN

Last Phase

Athens Regional Medical Center –McMinn County TN
Hamilton Medical Center –Whitfield County GA

7. Provide the address, zip code, Rural Urban Commuting Area (RUCA) code and phone number for each health care facility participating in the network.

First Phase Network Development

Copper Basin Medical Center
144 Medical Center Drive
Copperhill, TN 37317
RUCA code 10
Contact: David Hyatt, CEO, 423-496-5511

Erlanger Bledsoe
128 Wheeler Town Road
Pikeville, TN 37367
RUCA code 10
Contact: Douglas Fisher, Sr. Director Governmental and Community Affairs,
423-778-9642

Erlanger Baroness
975 East Third Street
Chattanooga TN 37403
RUCA Code 1
Contact: Douglas Fisher, Sr. Director Governmental and Community Affairs,
423-778-9642

Erlanger North
632 Morrison Springs Rd
Red Bank TN 37415
RUCA code 1
Contact: Douglas Fisher, Sr. Director Governmental and Community Affairs,
423-778-9642

North Valley Medical Center
723 Rankin Avenue (US 127)
Dunlap TN
RUCA code 10
Contact: Bill Harmon, CEO, 423-949-5100

Rhea Medical Center
7900 Rhea County Highway
Dayton TN 37321
RUCA code 8
Contact: Ken Croom, CEO 423-775-1121

Erlanger Woman's/ Erlanger East
1755 Gunbarrell Rd
Chattanooga, TN 37421
RUCA code 1
Contact: Douglas Fisher, Sr. Director, Governmental and Community Affairs,
423-778-9642

Woods Memorial Hospital
886 Highway 411 North
Etowah TN 37331
RUCA code 7
Contact: Don Downey, Administrator, 423-263-3600

Later Phase

Grandview Medical Center
1000 Hwy 28
Jasper TN 37347
RUCA code 2
423-837-3330

Hutcheson Medical Center
100 Gross Crescent Circle
Fort Oglethorpe, GA
RUCA code 1
706-858-2000

Skyridge Medical Center
2305 Chambliss Avenue NW
Cleveland TN 37347
RUCA code 1
423-559-6000

8. Indicate previous experience in developing and managing telemedicine programs.

Erlanger Health System has been developing and managing telemedicine programs for over six years. This process began with the Hamilton County Clinic, located in the Hamilton County jail and was later expanded to Erlanger Bledsoe, which is a remote rural hospital located 50 miles away across a mountain in the City of Pikeville. Erlanger received some state funding to install video capability at the Erlanger Bledsoe emergency

department which linked it to the main campus emergency department at Erlanger Baroness. This system is not very state of the art, because Erlanger has not had access to funding to make needed improvements. The video capability has a digital camera so the remote user can get close up imagery of the patient. Stethoscope work is carried across analog lines.

Presently x-ray images are transmitted back and forth between the Erlanger main campus and Erlanger Bledsoe using bonded T-1 circuits, Erlanger has leased two of these and is getting ready to add two more for this connection to Erlanger Bledsoe. Erlanger has also been contacted by the hospital serving the City of Rome and Floyd County Georgia, regarding the future need to transmit high resolution imagery back and forth for analysis. At this time Erlanger doesn't have the capability to do this.

While this current telemedicine system is rather simple, it has given Erlanger Health System good experience in telemedicine and has clearly demonstrated the immense every-day value of this expanding technology. The availability of a fiber network would dramatically increase the capability for telemedicine and would solve some other problems such as eliminating the need for duplicate computer servers which have been a problem for the current telemedicine operation. Erlanger's contact for Telemedicine is Jim Conner (423-778-3121).

9. Provide a project management plan outlining the projects leadership and management structure, as well as its work plan, schedule, and budget.

Erlanger Health System will enter into a contractual agreement with Chattanooga's Electric Power Board, a public utility, to manage the physical design, installation and long term operation and maintenance of the proposed health care network.

EPB has completed eight years of operation in their telecommunications division which offers commercial telephone and internet service. EPB is the second largest provider of local telecommunications business services in the Chattanooga area. The current FY 2007 *operating* budget for the EPB telecom division is \$6 million in addition to capital expenditures. Staffing of the division consists of 46 employees. Of these employees, two are administrators, 20 are in sales and marketing which includes customer care and billing. The remaining 24 telecom staff are located in network operations.

As of spring 2007, there are 185 miles of fiber in EPB's network. Beginning in July 2007, EPB will expand this fiber network by building 690 miles of transport rings connecting all electrical substations. This will be followed in the fall of 2007 with feeder fibers down local streets and roads. By early 2008, EPB will begin connecting large numbers of customers, both commercial and residential to the fiber network. Within 36 months from the start of this expansion, or by July 2010, EPB will have reached the majority of their current electrical customers with fiber. Within sixty months, or by 2012, EPB expects to have 6,900 miles of fiber in place and be capable of serving all of their customers throughout the rural portions of their service area.

The proposed network will consist of portions of EPB's fiber network, new fiber to link the first phase hospitals and possibly the use of some existing dark fiber that may be available through area vendors such as Kentucky Data Link (KDL). If existing fiber can be used in some cases, it can extend the initial reach of the network. The final evaluation of these options will be a function of the network design and cost benefit considerations.

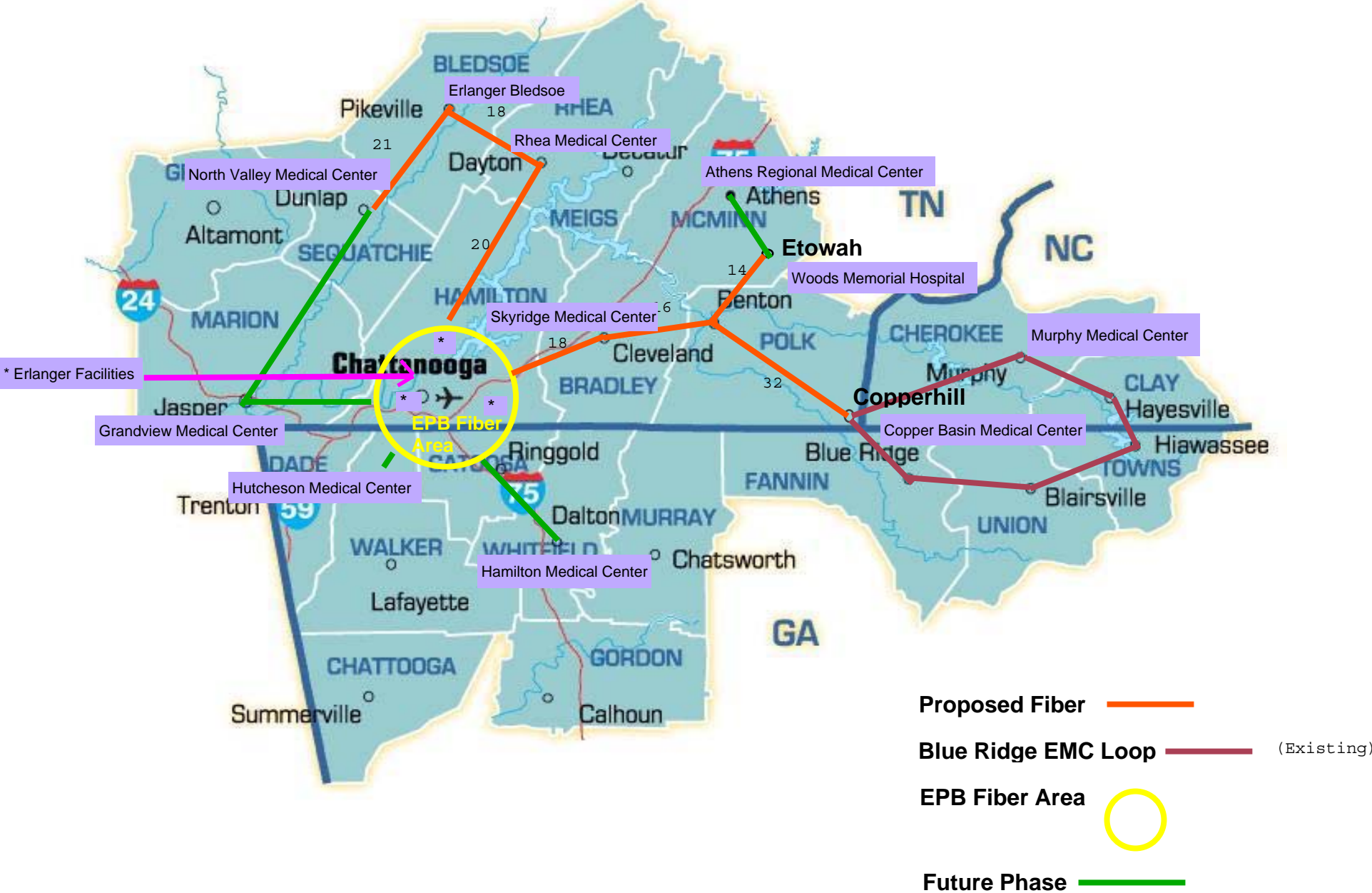
Budget

Engineering	
Network design phase services	55,000
Construction phase services	25,000
Environmental Compliance (assessments, Construction permits, plan review fees)	10,000
Project Administration	35,000
Legal	5,000
Construction (159 miles@ \$15,000 per mile)	2,385,000
Contingency	71,600
TOTAL	\$ 2,586,600

Sources	FCC Rural Health Care Pilot Program	2,198,610
	Erlanger/EPB	387,990
TOTAL		\$ 2,586,600

If this rural health care network is funded, it will add a minimum of 159 miles of additional fiber to this network in order to serve the previously identified hospitals and access other now remote area networks that will link additional rural hospitals. It is anticipated that it will take six months from release of FCC grant funds to complete the rural health care network planning and design, establish necessary agreements with electric providers and other public entities for right-of-ways and secure any needed permits relative to construction. Three months are projected for review and approvals of plans and bid documents including 30 days for public bidding. The construction project will be divided into multiple bids in order to attract smaller more competitive contractors and hopefully allow for a shorter construction period. After acceptance of bids, it is anticipated that another month will be required for bid analysis and review by the funding agency, awards, securing bonds, pre-construction conference and issuing a notice to proceed. Construction is expected to take approximately 9 months. This total cycle should be complete in 19-20 months from release of funds.

PROPOSED RURAL HEALTHCARE FIBER NETWORK



10. Indicate how the telemedicine program will be coordinated throughout the state or region.

The planned network will require coordination at a minimum of two levels. It will be necessary to structure the coordination of the physical development of the network and to structure development of the network content and functions.

Physical Network Development Coordination:

As with any regional project this one will begin with scoping meetings among all the participants to fully explore opportunities and define expectations. These will initially involve the key staff of first phase hospitals and then will expand to include all potential electric power distributors which may be impacted and involved in the network. The Southeast Development Corporation, a regional non-profit SBA certified business development corporation with long term experience in grants administration and development of projects has agreed to plan and coordinate this process across the multi-state region which is also their general service area. Staff of the development corporation have a long and successful history of partnerships with the region's hospitals and electric power distributors on various projects, so this regional health care network partnership will not require the time consuming development of new relationships. Southeast Development Corporation also plans to work with Erlanger to administer this grant in accordance with program requirements and reporting procedures.

Network Content Development Coordination:

This process will also be developed through planning meetings among primary health care providers that will be initially linked in the system. The content design assumptions are that this project will provide the necessary bandwidth to connect major medical systems to rural area medical centers, clinics, doctor's offices and even patient homes. The added bandwidth will allow access to new Remote Presence efforts developed by Erlanger Health Service. As a result, the rural physician will have access to Erlanger resources and the Erlanger staff will have access to the patient's resident medical staff in real time. Specific activities will include:

- Weekly sessions called Grand Rounds, are held for general practitioners and specialist physicians on the latest medical findings and procedures. Dr. Larry Miller Director of Erlanger/UT Medical Center currently manages an operation to send these Grand Rounds to Erlanger Bledsoe in Pikeville. Due to bandwidth limitation the results are unsatisfactory. Additionally he has a desire to expand this continuing education effort to additional rural sites and medical professionals.
- Real time MRI and other radiological records will be digitalized and provided to rural healthcare facilities. Specialists located at Erlanger can conduct live consultation with rural physicians while the patient is undergoing diagnoses with specialty equipment beyond the economic reach of rural facilities.

Images will be digitalized and send via broadband as they are being developed.

- Rural physicians will have access to patient surgical procedures while it is performed on their patients. The surgeon will be able to connect with the rural physician for consultation during surgery. An added benefit to this activity is the rural physician's opportunity to gain experience on what surgical procedures are involved with a specific diagnoses.
- On a local level fiber to the home will allow more home patient care. Medical staff, both at Erlanger and in local facilities will be able to connect with video and voice for special care patients. This will extend local medical facilities by allowing the patient to return home sooner but receive continuing quality care.
- Currently when a patient's file is required, the small electronic files can be sent over current bandwidth. Larger image files are shipped overnight or in a crisis, delivered by a private vehicle. This necessity results in delayed treatment and higher costs. Larger bandwidth will allow these large files to be sent over secure fiber lines and arrive with all the patient's files.

11. Indicate to what extent the network can be self-sustaining once established.

Over time the planned network must be capable of paying its own way. Initially the network will likely need to be subsidized by Erlanger and EPB until it can be established with connectivity to the primary hospitals in the service area and linked to other regional networks such as Blue Ridge EMC's and Balsam West. This initial subsidization should not be a substantial burden as the network will be operated and maintained under contract by EPB which has their own fiber network across their electrical service area and thus the planned rural health care network will be able to take advantage of an existing economy of scale and only be an incremental expense. EPB along with Blue Ridge EMC are limited open access while Balsam West is fully open access. This accessibility will allow for the entire medical community to generate entrepreneurial uses of the network, and thus create revenue opportunities to help underwrite and sustain the network going forward.